REMARKS

The Office action dated November 1, 2002 has been carefully considered. Claims 1, 4, 6-13, 15-20, 22, 23, 25-29, 31-36, 38-41, 43-45 are currently pending in this application and are presented for the Examiner's review and consideration. Claims 1, 17, 34, 35, 36, 43 and 45 have been amended to further define the invention, and claims 30, 37 and 42 have been canceled, without prejudice.

I. OBJECTIONS TO THE DRAWINGS

The Examiner objected to the drawings under 37 C.F.R. 1.83(a) for not showing the following features of the invention specified in the claims: (1) "the indentation is substantially V-shaped only at the corner sections," (2) "the indentation is substantially flat at a point on the wall section intermediate the corner sections," and (3) "indentation has a vertical thickness that is substantially zero at a point on at least one of the side wall sections substantially intermediate the corner sections."

Regarding feature number (1), which appeared in claims 1, 36 and 43, applicants have amended these claims to more precisely define the invention. The word "only" has been canceled from claims 1, 36 and 43 and replaced with the words "and deepest." This portion of claims 1, 36 and 43 now recites that the indentation "is substantially V-shaped and deepest at the corner sections." This claim language previously appeared in dependent claim 29, which depends from claim 1. Applicants respectfully submit that this feature of amended claims 1, 36 and 43 is clearly shown in the drawings as filed. Accordingly, no changes to the drawings are necessary for feature number (1). No new material has been added by this amendment to claims 1, 36 and 43.

Regarding feature number (2), which appeared in claim 35, applicants have amended claim 35 to more precisely define the invention. Claim 35 has been amended to recite that "the indentation is shallowest at a point on the side wall sections intermediate the corner sections." Applicants respectfully submit that this feature is shown in the right side of Figure 4 as originally filed (now Figure 4B) and in the cross-sectional view of Figure 5 as originally filed, where the indentation 24 is shown as being shallowest at a point intermediate the corner sections. Accordingly, no changes to the drawings are necessary for feature number (2), and no new material

has been added by this amendment to claim 35.

Regarding feature number (3), which appeared in claim 42, claim 42 has been canceled, without prejudice, thereby rendering this objection moot.

The Examiner also objected to Figure 4 under 37 C.F.R. § 1.84(h)(5) because this figure showed modified forms of construction in the same view. To address this rejection, applicants have replaced Figure 4 with new Figures 4A and 4B. Figure 4A expands the lift side of original Figure 4 to show the entire container, and Figure 4B expands the right side of original Figure 4 to show the entire container. The Brief Description of the Drawings has been amended to describe new Figures 4A and 4B. No new matter has been added.

II. CLAIM REJECTIONS UNDER 35 U.S.C. § 112

Claims 1, 4, 6-13, 15-18, 29, 30, and 34-45 were rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Regarding claims 1, 36 and 43, the Examiner stated that it had not been adequately disclosed how the indentation is substantially V-shaped only at the corners. In response, applicants have amended claims 1, 36 and 43 to clarify that the indentation is "substantially V-shaped and deepest at the corner sections." This amendment to claims 1, 36 and 43 is fully supported by the figures as originally filed, such as, for example, the right side of Figure 4 (now Figure 4B) and Figure 6, which both show the indentation being deepest at the corner sections and becoming shallower towards the midpoints of the wall sections. Thus, applicants respectfully submit that amended claims 1, 36 and 43 contain subject matter described in the specification in a way to reasonably convey to one skilled in the art that the inventors, at the time the application was filed, had possession of the claimed material.

Regarding claims 1, 15, 30, 36 and 43, the Examiner stated that there is not adequate support for the limitation "substantially V-shaped." Applicants respectfully disagree and cite to the right side of Figure 4 as originally filed (now Figure 4B), and to Figure 7 as originally filed, for support for the limitation "substantially V-shaped." These figures show an indentation

that is "substantially V-shaped" — it is nearly or perfectly shaped like a "V". Therefore, applicants respectfully submit that there is support for the limitation "substantially V-shaped" in claims 1, 15, 30, 36 and 43.

Regarding claims 4, 10, 38 and 44, the Examiner stated that it has not been adequately disclosed how the cross-section is substantially circular. Additionally, the Examiner stated that the terms "generally round" (specification, page 4, line 18) and "nearly circular" (specification, page 4, line 23) are not consistent with each other. For consistency, the specification has been amended at page 4, line 18 and at page 4, line 23 to recite a "substantially circular" cross-section. Applicants respectfully submit that this amendment is supported by the application as originally filed, at least at Figure 5, which shows that the cross-section of indentation 24 (represented by dashed circle 24) is substantially circular in the horizontal plane. Thus, no new matter has been added.

Regarding claims 4, 10, 13, 38 and 44, the Examiner stated that there is not adequate support for the limitation that the first cross-section is substantially rectangular or substantially square. Applicants respectfully direct the Examiner's attention to Figure 5 of the application as originally filed, which shows the first cross-section as substantially square (*e.g.*, nearly or perfectly square). Applicants note that a square is one type of a rectangle. The specification has been amended at page 4, line 17 to be consistent with Figure 5, and to provide explicit support for the claim language "substantially rectangular" or "substantially square." No new matter has been added.

Regarding claim 41, the Examiner stated that it has not been adequately disclosed how the indentation has a thickness that is smallest at a point intermediate the corners. Applicants respectfully direct the Examiner's attention to the right side of Figure 4 as originally filed (now Figure 4B), where the angled lines defining the vertical thickness of the indentation are spaced apart the greatest distance at the corner section (shown at the extreme right side of the drawing) and the smallest distance at a point intermediate the corners (*e.g.*, at a point along the dashed longitudinal axis of the barrel, as shown). Applicants therefore submit that there is adequate support for claim 41.

Regarding claims 35 and 42, the Examiner stated that it has not been adequately

disclosed how the indentation is substantially flat at a point on the side wall sections intermediate the corner sections (referring to claim 35) and that the thickness is substantially zero at a point on at least one of the side wall sections substantially intermediate the corner sections (referring to claim 42). Claim 35 has been amended to clarify that "the indentation is shallowest at a point on the side wall sections intermediate the corner sections." Applicants respectfully submit that this feature is shown in the right side of Figure 4 as originally filed (now Figure 4B) and in the cross-sectional view of Figure 5 as originally filed, where the indentation 24 is shown as being shallowest at a point intermediate the corner sections. Claim 42 has been canceled without prejudice, thereby rendering the rejection thereof moot.

Claims 1, 4, 6-13, 15-18, 29, 30 and 34-45 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention.

Regarding claims 4, 10, 38 and 44, the Examiner stated that based on the drawings, it is not clear how the cross-section of the indentation is substantially circular because "the indentation has flat areas where it meets the sidewalls." Applicants respectfully direct the Examiner's attention to the cross-sectional view of Figure 5, which shows that indentation 24 is substantially circular (*i.e.*, nearly or perfectly circular). The language "substantially circular" is intended to encompass an embodiment having a *nearly* circular cross-section — such as the cross-section having "flat areas" as shown in the figures — as well as embodiments having perfectly circular cross-sections.

Regarding claim 17, the Examiner stated that there is no antecedent basis for the limitation V-shaped. Claim 17 has now been amended to remove the language "V-shaped."

Regarding claims 1, 15, 30, 36 and 43, the Examiner stated that there was not adequate support for the limitation "substantially V-shaped." Applicants respectfully disagree and direct the Examiner's attention to the right side of Figure 4 as originally filed (now Figure 4B), where the indentation is V-shaped with slightly rounded corners, or "substantially V-shaped." The "substantially V-shaped" language is also intended to encompass other variations of the indentation that are nearly or perfectly V-shaped.

Regarding claims 29, 34 and 45, the Examiner stated that it is unclear what is being

claimed by the language "substantially intermediate the end portions." Applicants first note that claim 29 does not contain the term "substantially intermediate the end portions." With respect to claims 34 and 45, applicants agree with the Examiner's interpretation of the claim language "intermediate the end portions" as meaning at any point between the end points, and accordingly, have amended these claims to delete the word "substantially."

III. CLAIM REJECTIONS UNDER 35 U.S.C. § 102

Claims 10-13, 17 and 18 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,780,899 to Roper ("Roper '899"). The Examiner stated that "the second cross-section is generally round or nearly circular since the corners are rounded." Applicants respectfully traverse this rejection. Independent claim 10 recites a drum comprising, *inter alia*, a side wall comprising a first portion having a plurality of side wall sections that define a first circumferential cross-section, and a second portion comprising angular indentations in the side wall disposed at intersections between the side wall sections defining a second circumferential cross-section that is configured and dimensioned to resist buckling of the side wall, wherein the first cross-section is substantially rectangular, and the second cross-section is *substantially circular*. Roper '899 does not disclose or suggest a second cross-section that is *substantially circular*. Both the rectangular body section and the recess of Roper '899 have rectangular cross-sections with rounded corners. The rectangular cross-section with rounded corners of Roper '899 is in sharp contrast to the *substantially circular* cross-section of claim 10, which can be seen, for example, in Figure 5 as being nearly or perfectly circular. Thus, applicants respectfully submit that claim 10 and its dependent claims 11-13, 17 and 18 are patentable over Roper '899.

Claims 10-13 and 15-18 were rejected under 35 U.S.C. § 102(b) as being unpatentable over DE 2522094 ("DE '094"). The Examiner stated that "[t]he cross-section of the first portion is generally square and the cross-section of the second portion is generally round or nearly a circle." Applicants respectfully traverse this rejection. As stated above, independent claim 10 recites a "second cross-section [that] is *substantially circular*." This is not disclosed or suggested by DE '094, which instead discloses a generally rectangular container with notches cut into each corner to define a rectangular cross-section with angled corners (see Figure 2). This is in

sharp contrast to the *substantially circular* cross-section of claim 10. For at least this reason, applicants respectfully submit that independent claim 10, and its dependent claims 11-13 and 15-18, are patentable over DE '094.

IV. CLAIM REJECTIONS UNDER 35 U.S.C. § 103

Claims 1, 4, 6, 8, 9, 11, 12, 17 and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Roper '899 in view of United States Patent No. 4,046,275 to Virog, Jr. et al. ("Virog"). The Examiner stated that it would have been obvious to employ the indentation of Virog with the container of Roper '899 to provide the alternative shape for the indentation.

Claim 1 has been amended to clarify that the first indentation is "substantially V-shaped and deepest at the corner sections." This claim language previously appeared in dependent claim 29, which depends from claim 1. Applicants submit that no combination of Roper '899 and Virog discloses or suggests this feature. As pointed out by the Examiner in the Office Action, Roper '899 does not teach that the indentation is V-shaped (*see* Office Action, page 8). Nor does Roper teach that the indentation is deepest at the corner section. Moreover, Virog does not remedy these deficiencies of Roper '889. While the horizontal band 16 of Virog is arguably closer to a V-shape than the indentation of Roper '899, the band is clearly not "V-shaped and deepest at the corner section." Indeed, the band of Virog is not V-shaped at the corner sections at all, let alone V-shaped and deepest at the corner sections. Thus, no combination of Roper '899 and Virog discloses or suggests an indentation that is "substantially V-shaped and deepest at the corner sections," as recited by independent claim 1. For at least these reasons, applicants respectfully submit that independent claim 1, and its dependent claims 4, 6, 8 and 9, are patentable over Roper '899 and Virog. In addition, claims 11, 12, 17 and 18 depend from independent claim 10 which, as demonstrated above, is patentable over Roper '889; Virog does not remedy the deficiencies of Roper '889.

Claims 1, 4, 6, 29, 30 and 34-38 were rejected under 35 U.S.C. § 103(a) as being unpatentable over DE '094 in view of DE 9408722 ("DE '722"). The Examiner stated that it would have been obvious to employ the ring of DE '722 in the container of DE '094 to provide for automated or easier transportation of the container.

Independent claims 1 and 34 have been amended to recite that the indentation is "substantially V-shaped in a plane extending substantially parallel to the longitudinal axis" of the drum. This feature is shown, for example, in Figure 7 of the application as originally filed, where the indentations 24 are substantially V-shaped in the plane of the paper. These claim features previously appeared in dependent claims 30 and 37, which have been canceled, without prejudice. Neither DE '094 nor DE '722 teaches or suggests a drum having an indentation that is "substantially V-shaped in a plane extending substantially parallel to the longitudinal axis" of the drum. DE '094 simply does not disclose or suggest that the indentations 10 are "substantially V-shaped in a plane extending substantially parallel to the longitudinal axis," and DE '722 does not disclose any indentations in the side wall of the barrel at all. Thus, applicants respectfully submit that amended independent claims 1 and 34, and their dependent claims 4, 6, 29, 30, 35-38, are patentable over any combination of DE '094 and DE '722.

Claims 1, 4, 6, 10-15, 17, 18, 29, 30, 34-38 and 39-45 were rejected under 35 U.S.C. § 103(a) as being unpatentable over DE '722 in view of Virog. The Examiner stated that it would have been obvious to employ the indentation of Virog in the container of DE '722 to reinforce the sidewall. Applicants respectfully traverse this rejection.

As the Examiner is well aware, there are three basic criteria that must be met to establish a case of prima facie obviousness: (1) there must have been at the time of the invention a motivation to combine the references cited; (2) the alleged prior art must teach or suggest all of the limitations of the claims alleged to be obvious; and (3) there must have been at the time of the invention a reasonable expectation of success. MPEP § 2142. Applicants respectfully submit that in this case there is no motivation to combine the drum of DE '722 with the milk bottle of Virog '722. First, the two inventions are suited for different purposes. The container of DE '722 is intended for bulk storage of commodity liquids or chemicals, while the milk bottle of Virog intended for holding milk. Second, the containers of DE '722 are designed to be stackable upon one another to maximize the ratio of stored product to amount of three-dimensional space. The containers of DE '722 achieve this function in part through their transport ring. The milk bottles of Virog are not designed for or suitable for stand alone stacking upon one another and have no transport ring. In fact, the walls of the milk bottle disclosed in Virog must be reinforced just to

withstand the pressure created thereon by the milk stored in the bottle (*see* Virog, 2:45-48) — it is inconceivable that one skilled in the art would have looked to such a weak bottle when designing a drum for stand alone stacking. Third, one of ordinary skill in the art of bulk containers, like that of DE '722 would not have a working familiarity with smaller, milk bottles, like that of Virog. Bulk container design and milk bottle design are different fields of art, and a skilled artisan in one field would not have motivation to combine features in one art with that of the other. For the above-mentioned reasons, applicants submit that there would be no motivation to combine the bulk container of DE '722 with the milk bottle of Virog. Therefore, applicants respectfully submit that claims 1, 4, 6, 10-15, 17, 18, 29, 30, 34-38 and 39-45 are patentable over DE '722 in view of Virog.

Dependent claim 7 was rejected under 35 U.S.C. § 103(a) as being unpatentable over DE '722 in view of Virog as applied to claim 1 and further in view of Snyder et al. ("Snyder"). The Examiner stated that it would have been obvious to employ the longitudinal indentations of Snyder in the modified container of DE '722 to prevent the sidewall bulging when stacked or to allow for a thinner wall. As demonstrated above, there is no motivation to combine DE '722 with Virog, and Snyder does not provide the missing motivation. Accordingly, applicants respectfully submit that dependent claim 7 is patentable over any combination of DE '722, Virog and Snyder.

Claims 1, 4, 6, 8-13, 15, 17, 18 and 34-38 were rejected under 35 U.S.C. § 103(a) as being unpatentable over DE '722 in view of Sugiura et al. ("Sugiura"). The Examiner stated it would have been obvious to employ the indentation of Sugiura in the container of DE '722 to reinforce the sidewall. This rejection is respectfully traversed.

There is no motivation to combine the bottle of Sugiura with the container of DE '722. First, the two inventions are suited for different purposes. The container of DE '722 is suited for bulk storage of commodity liquids or chemicals, while the bottle of Sugiura is suited for holding consumable liquids, like soft drinks or water. Second, the containers of DE '722 are designed to be stackable upon one another to maximize the ratio of stored product to amount of three-dimensional space. As mentioned above, the containers of DE '722 achieve this function in part through their transport ring. The bottles of Sugiura are not designed for stand alone stacking

upon one another and have no transport ring. Because of their design, the bottles of Sugiura do not maximize the ratio of stored product to amount of three-dimensional space. Third, one of ordinary skill in the art of bulk containers, like that of DE '722 would not have a working familiarity with smaller bottles, like that of Sugiura. Bulk container design and bottle design are different fields of art, and a skilled artisan in one field would not have motivation to combine features in one art with that of the other. For the above-mentioned reasons, applicants submit that there would be no motivation to combine the bulk container of DE '722 with the bottle of Sugiura. Therefore, applicants respectfully submit that claims 1, 4, 6, 8-13, 15, 17, 18, and 34-38 are patentable over DE '722 in view of Sugiura.

Dependent claim 7 was rejected under 35 U.S.C. § 103(a) as being unpatentable over DE '722 in view of Sugiura as applied to claim 1 above, and further in view of Snyder. The Examiner stated it would have been obvious to employ the longitudinal indentations of Snyder in the modified container of DE '722 to prevent the sidewall bulging when stacked or to allow for a thinner side wall. As demonstrated above, there is no motivation to combine DE '722 with Sugiura, and Snyder does not provide the missing motivation. Accordingly, applicants respectfully submit that dependent claim 7 is patentable over any combination of DE '722, Sugiura and Snyder.

VI. CONCLUSION

Applicants respectfully submit that all pending claims comply with the requirements of 35 U.S.C. §112 and are allowable over the cited references, whether taken singly or in combination. Accordingly, this application is now in condition for allowance, early notice of which would be appreciated. Should the Examiner not agree that all claims are allowable, then a personal or telephonic interview is respectfully requested to discuss any remaining issues and to accelerate the allowance of the above-identified application.

Respectfully submitted,

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APPENDIX A

Proposed Changes To The Drawings

APPENDIX B

Marked-Up Specification Paragraphs

Paragraph on page 2, beginning at line 19:

BRIEF DESCRIPTION OF THE DRAWINGS

The invention is further explained and described below in the drawings of the embodiments that are presented. The following is shown:

FIG. 1 is a top view of a square drum-type container according to the present invention;

FIG. 2 is a side view of a square drum-type container according to the present invention, with the right side showing a partially cross-sectional representation of the upper and lower segments taken along line A-A of FIG. 1, and the left side showing a partially cross-sectional representation of a different embodiment according to the present invention;

FIG. 3 is a cross-section through the body of a square drum-type container according to the present invention, showing a circular footprint for comparison;

FIG. 4A is a side view of [a modified] one embodiment of a drum according to this invention, with a partially cross-sectional representation of the upper and lower segments;

FIG. 4B is a side view of another embodiment of a drum according to this invention, with a partially cross-sectional representation of the upper and lower segments;

FIG. 5 is a top view of a preferred embodiment of the invention;

FIG. 6 is a side view of the container of FIG. 5, with a partially cross-sectional representation of the upper and lower segments;

FIG. 7 shows a diagonal cross-section of the drum of FIG. 5 taken along line B-B;

FIG. 8 illustrates the handling of a drum according to the present invention, lying sideways;

FIG. 9 illustrates the handling of a tipped drum according to the present invention; and

FIG. 10 is a top view of four palletized drums according to the present invention.

Paragraph on page 4, beginning at line 16:

FIG. 5 is a top view of the preferred embodiment of the drum 10. This embodiment of drum 10 has a first portion with a [generally] substantially rectangular or substantially square cross-section, and a second portion with a [generally round] substantially circular cross-section defined by four angular corner indentations 24 formed in the drum. The angular corner indentations 24 are outlined by the round dashed line. The indentations 24 may be deeper at the corner areas than they are on the side wall sections in between. In addition, as shown in FIG. 6, the indentations 24 define a vertical thickness that varies around the circumference of the side wall, *e.g.*, is greatest in the corner areas and transitions into the flat surfaces of the side wall sections in between.

Paragraph on page 4, beginning at line 22:

In the preferred embodiment of FIG. 5, the second portion of the drum 10 has a [nearly] substantially circular cross-section in the horizontal plane of maximum continuous indentation. Referring to the outline of the [generally] substantially square drum 10, the ratio between the long radius 36, which is measured toward the corners, and the short radius 38, which is measured toward the midpoint of the side walls, is between 1.05 and 1.34 and preferably about 1.22.

APPENDIX C

Marked-Up Claims

1. (Twice Amended) A drum comprising:

a side wall comprising a plurality of side wall sections connected by corner sections, the side wall having end portions disposed at longitudinal ends thereof;

first and second end walls located adjacent the end portions, the first end wall defining a fill/drain opening therein;

a circumferential carrying and transport rim disposed on at least one of the end portions and configured for carrying the drum with drum handling equipment; and

a first indentation formed on the side wall substantially intermediate the end portions, the first indentation configured and dimensioned to resist buckling of the side wall, wherein the drum defines a longitudinal axis between the end portions, and the indentation extends substantially circumferentially about the side wall around the longitudinal axis and is substantially V-shaped [only] and deepest at the corner sections, wherein the first indentation is substantially V-shaped in a plane extending substantially parallel to the longitudinal axis.

17. (Amended) The drum of claim 10, wherein the drum defines a drum height along the longitudinal axis and between the end portions, wherein the [V-shaped] indentations are disposed in a plane located at about 30% to about 70% of the drum height.

30. (Canceled)

34. (Amended) A drum comprising:

a side wall comprising a plurality of side wall sections connected by corner sections, the side wall having end portions disposed at longitudinal ends thereof, wherein the drum defines a longitudinal axis between the end portions;

first and second end walls located adjacent the end portions, the first end wall defining a fill/drain opening therein;

a circumferential carrying and transport rim disposed on the drum and configured

for carrying the drum with drum handling equipment; and

an angular indentation formed on the side wall [substantially] intermediate the end walls, wherein the indentation is deeper at the corner sections than it is at a point on at least one of the side wall sections intermediate the corner sections, and the indentation is substantially V-shaped in a plane extending substantially parallel to the longitudinal axis.

35. (Amended) The drum of claim 34, wherein the indentation is [substantially flat] shallowest at a point on the side wall sections intermediate the corner sections.

36. (Amended) The drum of claim 34, wherein the indentation is substantially V-shaped [only] and deepest at the corner sections.

37. (Canceled)

42. (Canceled)

43. (Amended) The drum of claim 39, wherein the indentation is substantially V-shaped [only] and deepest at the corner sections.

45. (Amended) A drum comprising:

a side wall comprising a plurality of side wall sections connected by corner sections, the side wall having end portions disposed at longitudinal ends thereof;

first and second end walls located adjacent the end portions, the first end wall defining a fill/drain opening therein;

a circumferential carrying and transport rim disposed on the drum and configured for carrying the drum with drum handling equipment; and

an indentation formed on the side wall [substantially] intermediate the end walls; wherein:

the indentation defines a vertical thickness that varies around the

circumference of the side wall; and

the indentation is deeper at the corner sections than it is at a point on at least one of the side wall sections intermediate the corner sections.